CLAIMS

I claim:

1. A method for displaying an image, comprising

receiving image data representative of respective images,

receiving brightness data representative of the brightness of respective images,

based on the image data, modulating light from a light source to provide respective images,

based on brightness data, adjusting light from the light source to affect brightness of the image.

2. The method of claim 1, said adjusting light comprising correcting gamma of the respective images.

3. A storage medium, comprising

a material able to retain data representative of images,

image data stored in the material, said image data representative of respective images,

brightness data stored in the material, said brightness data representative of brightness of respective images, and

wherein the storage locations at which the brightness data is stored is different from the storage locations at which the image data is stored.

4. The medium of claim 3, said image data representing light transmission of respective pixels of an image provided by the effect of a light modulating display modulating incident light to the light modulating display, and said brightness data being stored in the material at a place that does not represent light transmission of a respective pixel.

5. The medium of claim 3, said brightness data being multiplexed with respect to the image data.

6. A method of data storage for a sequence of images, comprising

storing in a storage medium image data representative of a sequence of images,

storing at a different location in the storage medium brightness data representative of brightness of respective images.

7.   The method of claim 6, said storing brightness data comprising storing brightness data representative of brightness of respective images.

8.   The method of claim 6, said storing brightness data comprising storing brightness data representative of a number of images.

9.   The method of claim 8, said storing brightness data comprising storing for one image brightness information representative of brightness of a number of images.

10.   The method of claim 6, said storing steps comprising storing data in a DVD, CD, tape or memory device.

11.   The method of claim 6, said storing brightness data comprising storing brightness information including gamma correction.

12.   The method of claim 6, said storing brightness data comprising storing brightness information representative of brightness of one image based on brightness of a number of images.

13.   A method of storing image data, comprising

storing in a storage medium image information representing respective images, and

storing image brightness information in the storage medium at a separate location from the location at which image information is stored.

14.   The method of claim 13, said storing image brightness information comprising multiplexing the image brightness information with the image information,

said multiplexing comprising storing brightness information and storing image brightness information in time sequence relation in the storage medium.

15.   The method of claim 13, said storing image brightness information comprising storing for at least one image image brightness representative of image brightness of a number of images.

16.   A display system for passive displays, wherein data representing illumination characteristics of an input image or scene has been incorporated in a transfer media, comprising

a control responsive to such data to control the optical characteristics of incident light to a passive display to tend to control, optimize or maximize contrast or shades of gray in the displayed image.

17.   The system of claim 16, said control tending to maximize performance of the passive display.

18.   A display system for passive displays, wherein data representing illumination characteristics of an input image or scene has been incorporated in a transfer media, comprising

a control responsive to such data to control the optical characteristics of incident light to a passive display to tend to optimize or to maximize color fidelity.

19.   A system for preparing data for use in displaying a sequence of images, comprising

an input to receive image information for use in operating a light modulating display to provide a sequence of images,

an analyzer to analyze illumination characteristics of a number of images of such a sequence of images to obtain light control information for use in controlling optical characteristics of the incident light to a light modulating display and gamma so as to tend at least one of to minimize energy usage, to maximize contrast or shades of gray, and to maximize color fidelity of displayed images.

20.   The system of claim 19, further comprising a transfer media for transferring the image information and light control information to a display system, said transfer media comprising at least one of radio signals and modulated video signals.

21.   The system of claim 20, said transfer media comprising a storage medium, said storage medium comprising at least one of a dvd, cd, tape, computer memory, hard drive.

22.   The system of claim 19, further comprising a multiplexer for time multiplexing the light control information with image information representing images of the sequence of images.

23.   The system of claim 19, wherein the image information is a video signal, and wherein the image information is digitized data and the light control information is digitized data.

24.   A display system, comprising
a passive display,
a source of illumination to illuminate the passive display and cooperative with the passive display to present images, and
a transfer medium providing data to control optical characteristics of light from the source of illumination and gamma at least one of to minimize energy and to maximize contrast in respective displayed images by the passive display, and wherein the data is based on an evaluation of illumination of an input scene represented by an image for display.

25.   The system of claim 24, wherein the data is based on an evaluation of illumination of an input scene represented by several images for display, and wherein the passive display is operable to display a sequence of images, and wherein the several images include a number of images in the sequence of images preceding or following a given image for display.

26.   A display system for displaying a sequence of images, comprising

a passive display,

a light source to provide light to illuminate the passive display,

drive circuitry to drive the passive display to modulate light from the light source to provide images, and

a transfer medium providing image data representing respective images of an input scene and illumination data representative of an evaluation of the illumination of an input scene to control optical characteristics of the light source.

27.   The system of claim 26, said transfer medium comprising video signals and illumination data for respective images represented by the video signals, said video signals comprising modulated video signals, and said video signals representing image data for causing the passive display to provide respective images, and said illumination data being multiplexed with video signals representing respective images, and said transfer medium comprising at least one of an optical disk, compact disk, dvd, tape, electronic memory, hard drive, fixed disk, and computer.

28.   The system of claim 26, wherein said control of optical characteristics of said light source comprising control of gamma or correction of gamma.

29.   The system of claim 26, wherein said control of optical characteristics of said light source comprising tending to minimize energy usage by the display system.

30.   The system of claim 26, wherein said control of optical characteristics of said light source comprising at least one of tending to maximize contrast of images displayed by the passive display, tending to maximize shades of gray able to be produced by the display system, and tending to maximize color fidelity of the images displayed by the passive display.

31.   For use with a passive display operable to be illuminated by light from a light source to provide images, a transfer medium providing image data representing

respective images of an input scene and illumination data representative of an evaluation of the illumination of an input scene to control optical characteristics of such a light source.

32.   The transfer medium of claim 31, wherein the image data includes information indicating light transmitting or reflecting characteristics of respective pixels of an image formed by a passive display.

33.   The transfer medium of claim 32, wherein the image data for every pixel does not require brightness information, whereby the brightness information of a scene is substantially exclusively provided by the illumination data.

34.   The transfer medium of claim 33, said transfer medium comprising at least one of (a) a modulated video signal, (b) a signal storage medium, and (c) one of dvd, cd, tape, hard drive, electronic memory, optical memory, magnetic memory.

35.   For use with a passive display operable to be illuminated by light from a light source to provide images, a transfer medium providing image data representing respective images of an input scene and gamma data representative of an evaluation of the illumination and/or colors of an input scene to control optical characteristics of such a light source.

36.   A system for providing image data for display by an illuminated passive display, comprising

an image obtaining device to provide image data representing input scenes,

apparatus to evaluate the illumination of input scenes to provide illumination data to control the optical characteristics of an illumination source for a passive display, and wherein the illumination data controls optical characteristics of an illumination source at least one of to control gamma, to correct gamma, to tend to minimize energy requirements for such illumination source, to tend to maximize contrast or shades of gray, and to tend to maximize color fidelity.

37.   A method of editing images, which are composed of an assemblage of pixels for display or projection using a passive display to which input light is incident to provide images, comprising

adjusting a characteristic of the input light to obtain a desired appearance of the displayed image, and

storing the adjusted characteristic for use subsequently to adjust the characteristic of input light to obtain a desired appearance of the image provided by a passive display.

38.   The method of claim 37, further comprising visually viewing an image while adjusting a characteristic of the input light to obtain a desired appearance of the displayed image.

39.   The method of claim 37, said adjusting comprising manually adjusting.

40.   The method of claim 37, said adjusting comprising adjusting the characteristic of the input light comprising at least one of adjusting the characteristic of the input light to tend to optimize the displayed image, adjusting gamma, correcting gamma, to tend to maximize contrast, to tend to maximize the number of shades of gray available in the image, and to bias a scene portrayed by an image to a lighter or darker state relative to the actual scene from which the image was obtained.

41.   The method of claim 37, further comprising obtaining the illumination of an input scene portrayed by an image, and said adjusting comprising adjusting input light to provide an image having illumination that is substantially the same as the input scene.

42.   The method of claim 41, said obtaining comprising at least one of obtaining an average value of the illumination of the input scene, computing the illumination of the input scene by obtaining a spatial distribution of light intensity over the area of the input scene, and obtaining illumination information from a number of images of respective scenes.

43.   The method of claim 42, wherein the image is a given image in a sequence of images assembled to provide a motion picture effect, and wherein said obtaining illumination information from a number of images of respective scenes comprises obtaining such illumination information from a number of images in the sequence that precede or follow the given image in the sequence.

44.   A method of reducing the amount of data required to provide images from a source to a receiver for display or projection via a passive display and light source, comprising
separating intensity data from image data representing an image for display to obtain reduced image data and intensity data,
and separately providing (a) the image data excluding the intensity data and (b) the intensity data to control the display and the light source, respectively.

45.   A method for synchronized brightness control of video images and/or other images that are displayed sequentially using a passive display, comprising obtaining a characteristic brightness profile for one or more frames or images in a sequence of images, and adjusting at least one of the illumination intensity and/or gamma.

46.   A system synchronized brightness control for video images and/or other images that are displayed sequentially using a passive display, including a circuit and/or computer software to obtain a characteristic brightness profile for one or more frames or images in a sequence of images and an adjustment for at least one of the illumination intensity and/or gamma.

.47.   A method of using a media processor integrated circuit or the like capable of receiving different respective input signals and based thereon providing output signals to operate respective displays, such as, for example, television, HDTV, liquid crystal display, computer display, and/or other display(s) to provide images, comprising receiving input data representing image information and brightness information, and

providing such information respectively for displaying images and for determining illumination intensity.

48.   A method of using a media processor integrated circuit or the like, comprising receiving input video signals or the like representing images and brightness of the images, determining brightness of respective images, and providing a control to control a source of illumination for a display to display such images at controlled brightness.

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